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The happy artist: an empirical application of the work-preference model

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Abstract The artistic labor market is marked by several adversities, such as low wages, above-average unemployment, and constrained underemployment. Nevertheless, it attracts many young people. The number of students exceeds the available jobs by far. A potential explanation for this puzzle is that artistic work might result in exceptionally high job satisfaction, a conjecture that has been mentioned at various times in the literature. We conduct the first direct empirical investigation into artists' job satisfaction. The analysis is based on panel data from the German Socio-Economic Panel Survey. Artists on average are found to be considerably more satisfied with their work than non-artists, a finding that corroborates the conjectures in the literature. Differences in income, working hours, and personality cannot account for the observed difference in job satisfaction. Partially, but not fully, the higher job satisfaction can be attributed to the higher self-employment rate among artists. Suggestive evidence is found that superior "procedural" characteristics of artistic work, such as increased variety and on-the-job learning, contribute to the difference in job satisfaction.

Keywords Job satisfaction · Artists · Work-preference · Cultural economics

JEL Classification Z10 · J24 · J28 · J31

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1 Introduction

The artistic labor market is marked by several adversities. Artists earn less than they would with the same qualifications in other professions. Alper and Wassall (2006), for example, estimate that the average artist in the United States would earn roughly 10 % more as a professional or technical worker. Artists also suffer from above-average unemployment and constrained underemployment. In Germany, for example, the unemployment rate among artists is almost 1.5 times higher than among the total population (IAB 2011). Nevertheless, the field of arts seems to be attractive to many young people. The number of students exceeds the available jobs by far. In Germany, for example, arts students comprise 3.6 % of all students, whereas artists account for around 1 % of the total labor force (Eurostat 2011). A potential explanation for this puzzle is that artistic work might result in exceptionally high job satisfaction, which might compensate, or even overcompensate, for the observed labor market adversities.[1]

The conjecture that artistic work entails particularly high job satisfaction has been stated various times in the literature (e.g., Abbing 2002; Menger 1999). Similarly, some authors assert that artists gain "psychic income" from work (e.g., Adler 2006; Rengers 2002). Menger (1999, p. 555) depicts it as follows. "Artistic work can be considered as highly attractive along a set of measurable dimensions of job satisfaction that include the variety of the work, a high level of personal autonomy in using one's own initiative, the opportunities to use a wide range of abilities and to feel self-actualized at work, an idiosyncratic way of life, a strong sense of community, a low level of routine, and a high degree of social recognition for the successful artists."

In this study, we seek to expand on the existing knowledge by conducting the first direct empirical investigation into artists' utility derived from their work. A renowned panel data set from Germany, the German Socio-Economic Panel Survey (SOEP), is employed for the analysis. In order to proxy utility from work, self-reported job satisfaction is used. Artists are on average found to be considerably more satisfied with their work than non-artists, a claim that corroborates the conjectures from the literature. Differences in income, working hours, and personality cannot account for the observed difference in job satisfaction. Partially, but not fully, the difference in job satisfaction can be attributed to the higher self-employment rate among artists. Suggestive evidence is found that superior "procedural" characteristics of artistic work, such as increased variety and on-the-job learning, contribute to the difference in job satisfaction.

The remainder of the paper is structured as follows. Section 2 introduces the underlying work-preference model and discusses the previous literature. Section 3 addresses the problem of defining who is an artist. Section 4 contains the econometric analysis of the relationship between artistic work and job satisfaction. Section 5 concludes the paper with a summary and suggestions for further research.

[1] The fact that many people turn to the arts as a leisure activity underpins the belief that artistic work yields high satisfaction. In Germany, for example, 14 % of the adult population in 2007 took part in artistic activities, such as painting, drawing, and sculpture (Eurostat 2011).

2 Background

2.1 Work-preference model

The labor supply and career choice decisions of artists have long been a central issue in the economics of arts and culture. Throsby (1994) asserted that artists did not fit the standard economic model of labor supply. He claimed that artists actually derived utility and not disutility from work, as assumed by standard economics. He also claimed that artists derived less utility from income than other workers. His model of labor supply for artists, the so-called work-preference model, is based on these assumptions. The model rests on further assumptions. Individuals can supply labor to two labor markets, the artistic and the non-artistic. The hourly wage is higher in the non-artistic than in the artistic labor market. A minimum level of consumption is required for physical survival. Hence, individuals maximize their labor supplied to the artistic labor market and are subject to a subsistence consumption constraint, which might force them to supply some labor to the better-paying non-artistic labor market.

Throsby (1994) also brought some data to his model, stemming from a 1988 Australian survey elaborated specifically for artists. The survey was conducted with a random sample of artists, covering all art forms. In order to qualify as an artist, individuals had to be engaged in artistic work at the time of the survey or in the previous three to 5 years. Throsby estimated hourly arts and non-arts wages for the individuals, based on their level of education and training. The a priori assumption of the model that the non-arts wage is higher than the arts wage holds for 80 % of the individuals. For this group, standard economic theory clearly predicts that they would supply no labor to the artistic labor market. But this holds for only 2 % of the members of the group. Ninety-eight percent spent time on artistic work (on average half their working time), even though they could earn more by supplying all their working time to the non-artistic labor market. Robinson and Montgomery (2000) found similar results, using data from a 1989 US survey on artists. The individuals in this sample also earned on average much less per hour of artistic work than per hour of non-artistic work. Still they devoted about half their working time to artistic work. These findings corroborate the basic hypotheses of the work-preference model that artists derive high utility from artistic work and that they are relatively oblivious to financial concerns.

Cowen and Tabarrok (2000) developed a particularly interesting extension of Throsby's model. In their model framework, artists are faced with the choice to either produce art for the market or art, which pleases themselves. While the market can generate higher pecuniary benefits, artists also derive utility from critical praise or creating works that speak to them personally. Refinements of their model include reproducibility and market size aspects. Similar to Throsby's model, they predict that economic growth will increase the number of artists.[2]

[2] Cowen and Tabarrok (2000) emphasize that artists are not unique in deriving non-pecuniary benefits from particular forms of labor. For a more general discussion on non-pecuniary benefits form work, see also the early works on psychic income by, e.g., Thurow (1978, 1980) or Katz and Syrquin (1982).

2.2 Artists' labor market

Several empirical findings on the artistic labor market hint at the validity of the work-preference model or the more general hypothesis that artistic work entails high job satisfaction. Alper and Wassall (2006) is one of the most extensive works on the labor market of artists. They investigate quasi-panel data from seven US censuses and panel data from the US National Longitudinal Survey of Youth. The results suggest that artists suffer a substantial earnings penalty; that is, even with individual characteristics held constant, artists earn significantly less than the members of the reference group.[3] The authors further found that the earnings of artists displayed greater inequality than those of the reference group.[4] These inferior outcomes for artists concerning pay could be compensating differentials for higher job satisfaction. Alper and Wassall focused on two other explanations. They stressed that the results were consistent with artists being risk loving[5] and with artistic labor markets being winner-take-all markets,[6] also known as superstar markets.[7]

According to the existing literature, artists suffered more frequently from unemployment than the members of the reference groups (Menger 2001; Haak 2005; Alper and Wassall 2006). Artists also seemed to suffer several forms of constrained underemployment, such as non-voluntary part-time work and intermittent work (Menger 2001). These outcomes suggest that there is an oversupply of artists.[8] A possible explanation for this result is that artistic work entails a particularly high job satisfaction, which is anticipated by the labor market entrants. Another potential explanation, brought up by Towse (1992, 2006), is that individuals tend to enter the artistic labor market too frequently because they overestimate the likelihood of future success. Alper and Wassall (2006) did not believe that information asymmetries would persist over a period of 60 years. As such, they did not consider Towse's explanation as credible for the steady oversupply of artists found in their data.

Most artists seem to be unable to support themselves solely from doing art. They have to devote a substantial amount of time to non-artistic side jobs (Haak 2005; Throsby and Hollister 2003; Robinson and Montgomery 2000). Alper and Wassall (2006) report that in their main position artists work on average fewer hours than other professionals, but this gap has narrowed over recent decades. At the same time, the premium to a college or higher-level education (which most artists possess) rose in the non-artistic labor market. These findings are in line with Throsby's work-preference theory. One of its predictions is that an increase in the non-arts wage will induce the artists to spend more time on artistic work and less

[3] Withers (1985) found the same result for Australian artists using data from an extensive survey specifically targeted at artists.

[4] Haak (2005) found the same result for German artists using official data from the "Mikrozensus."

[5] An argument originally brought up by Santos (1976).

[6] An argument also prominent in Frank and Cook (1995).

[7] Influential articles from the superstar literature are Rosen (1981) and Adler (1985, 2006).

[8] According to Menger (2006), the oversupply of artists is a phenomenon reaching far back in history.

time on undesired non-arts side jobs because the subsistence consumption constraint can then be satisfied with a smaller volume of non-arts work.

In a nutshell, the artistic labor market exhibits some characteristics consistent with the work-preference model and the more general hypothesis that artistic work entails a high job satisfaction. However, this indirect evidence of artists' utility derived from work is only suggestive. The contribution of this paper lies in the first direct evidence on artists' job satisfaction.

2.3 Measuring utility

The usage of reported subjective well-being has become increasingly common in economics over recent years (see, e.g., Frey 2008; Layard 2006). This change is also reflected in the field of labor economics, where researchers increasingly use reported job satisfaction to measure non-pecuniary benefits from work (Benz and Frey 2008). In work psychology, the usage of reported job satisfaction has a longstanding tradition (D'Addio et al. 2007). We follow this line of research and use self-reported job satisfaction to proxy utility from work.

There are substantial advantages of using reported job satisfaction as a measure of utility from work over using compensating wage differentials. While wage differentials reflect non-monetary rewards from work adequately only if the labor market is sufficiently competitive, job satisfaction differentials can detect non-monetary rewards also if inefficiencies exist (e.g., if there are rents in the labor market). Frey (2008) names further, more general advantages of subjective measures of well-being. Subjective measures of well-being recognize that everyone has their own ideas about happiness. They are easy and direct measures, and data are available for a large number of countries and periods. They also represent experienced utility better than indirect measures, which instead reflect decision utility.

Subjective measures of well-being are also criticized, since they are prone to a multitude of systematic and non-systematic biases. The indicators may depend on the mode of interview, the order and the wording of questions, the scales applied, the actual mood of the respondents, and the selection of information processed. Human genes may predetermine psychological characteristics. Cross-country comparisons may be misleading due to different interpretations of the words 'happiness' and 'satisfaction' (Bertrand and Mullainathan 2001). Varying norms or expectations between individuals or over time may bias satisfaction estimates. Hamermesh (2001) finds, for example, that the influence of early-career expectations on job satisfaction disappears with time. Green (2007) states that people's assessments of their own situation are affected by norms, which themselves are unobserved and determined by societal and historical factors. Therefore, measuring long-term trends in job satisfaction in a population depends on the assumption that the norms against which satisfaction is measured change only slowly or not at all. Furthermore, individuals might report the satisfaction level they are expected to have, given their status, or the level others consider them having (Frank 2005). Some recognize job satisfaction as subjective measure, but doubt whether it captures well-being derived from work as a whole. They evaluate job quality by

examining, besides job satisfaction, the skills involved, work effort, workers discretion, pay, and job security (Hamermesh 2001; Green 2007). Finally, objectivists claim that utility can only be inferred from behavior.

However, the psychological literature has repeatedly shown that reported satisfaction measures exhibit great validity and reliability. Subjective well-being is moderately stable but sensitive to changing life circumstances (e.g., Sandvik et al. 1993; Erhardt et al. 2000). The verbal levels in questionnaires are on average successfully translated into numerical values, which supports the validity of the happiness scale level (van Praag 1991). Further validation comes from physiological measures, such as brain activity (e.g., Pugno 2004). Large samples of randomly surveyed people make any potential biases become non-systematic (Di Tella and MacCulloch 2006). Socio-demographic factors are usually controlled for in the econometric estimations model to reduce biases stemming from unobserved heterogeneity between individuals. Studies from economics have underpinned the validity of reported job satisfaction by showing its ability to predict future quits (e.g., Clark 2001) and its correlation with absenteeism (Clegg 1983). So, even though there are some disadvantages to reported satisfaction measures, the present state of the literature suggests that they constitute a satisfactory empirical approximation to individual utility.

2.4 Job satisfaction

To the best of our knowledge, this is the first empirical study that focuses on artists' job satisfaction. The only study somewhat related is the one of Rose (2007), which compares occupational groups with respect to job satisfaction. In a raw comparison of average job satisfaction scores, artists rank high (10th of 81 occupational groups). In a multivariate regression, being an artist does not have a significant effect on job satisfaction and neither do most other occupations. The artist's job satisfaction is not further investigated, as the focus of the study is not on artists.

The general literature on the determinants of job satisfaction is ample. The older literature stems mainly from psychology and sociology (for an excellent review, see Warr 1999).[9] Economists' interest in job satisfaction is relatively young, but in recent years, the economic literature on the subject has grown rapidly. Benz and Frey (2008) investigated the influence of self-employment and firm size on job satisfaction. They found that the self-employed were more satisfied with their work than the employed, and those employed in small firms were more satisfied with their work than those employed in large firms. Benz and Frey showed that these effects were driven by the greater independence and autonomy that the self-employed and employees in small firms enjoy and not by higher income or lower working hours. These results are evidence for procedural utility; that is, people seem to value not only outcomes but also the processes leading to outcomes. The determinants of job satisfaction are likely to change over time, induced by major transformations of modern economies, like the growth of service industries since the 1970s. Green

[9] A shortcoming of this literature is that it usually uses cross-sectional data only, so unobserved individual heterogeneity is rarely accounted for (D'Addio et al. 2007).

(2007) points out the contrast between the increasing wealth in national economies and the ambiguous changes occurring in the quality of jobs. Over the last decades, job quality improved as many workers are doing more skilled (and so more fulfilling) work. On the down side, workers experienced a deteriorating work–life balance, increased workplace stress due to effort intensification, rising insecurity, and decreasing autonomy. These aspects are likely to account for a part of the difference between employed and self-employed worker.

D'Addio et al. (2007) estimated the effects of classical control variables on job satisfaction using two new ordered logit fixed effects estimators and a more traditional random effects ordered probit estimator for comparison. The effects of central economic factors are the same as in previous studies (i.e., positive in the case of pay and negative in the case of working hours). This corroborates most economists' notion of the satisfaction equation as the empirical counterpart of a utility function, in which pay and working hours are the natural arguments (Kristensen and Johansson 2008; D'Addio et al. 2003). To complement these two traditional measures, Clark evaluates a variety of job characteristics (Clark 1998) . He identifies four additional aspects measuring job quality: (1) future prospects (promotion and job security), (2) how hard or difficult the job is, (3) the job content: interest, prestige and independence, and (4) interpersonal relationships (with co-workers and with management). The regression analysis shows that overall job satisfaction is strongly correlated with all of these job quality measures.

3 Definition of artists

For most professions, a formal system of recognition exists that makes it trivial to determine their members. Not so for artists. In most advanced economies, everyone is free to call themselves an artist (Frey 2003). Hence, any study on artists is confronted with the problem of defining who is an artist and who is not. The problem deserves special attention because the results of empirical studies on artists depend crucially on the definition of artists used (Bille 2010).

3.1 Literature on the definition of artists

According to Frey and Pommerehne (1989, pp. 146), there are at least eight criteria to determine who is an artist.[10] Among the features defining an artist, they mention the time spent on artistic work, the income derived from artistic activities, being a member in a professional artists' group or association, or subjective self-evaluation. All the ways of defining an artist have certain drawbacks. The amount of time spent on artistic work is often hard to assess and, therefore, rarely used in practice (Bille 2010). Using the amount of income derived from artistic activities as criterion is likely the most disputed definition. It is very appealing to economists because it relies on the objectivity of the market. However, the criterion also has serious shortcomings. As discussed in Sect. 2.2, most art producers earn a substantial part of

[10] It is also common to combine these criteria (see, e.g., Throsby and Hollister 2003; Throsby 2001).

their income from non-artistic work and some art producers receive no remuneration at all from their artistic work over significant periods in their lives (Throsby 2001). As such, the second criterion disregards several groups of people who could reasonably be viewed as artists. Using membership in a professional artists' group or association as a criterion has disadvantages as well. The associations with the different artists groups (musicians, visual artists, actors, etc.) apply different prerequisites for membership. Some of them are quite elitist, whereas others apply very open prerequisites. Besides that, if the degree of organization is low, many artists will not be captured (Bille 2010; Throsby and Hollister 2003; Throsby 2001).[11] The criterion also produces a conservative bias as mainly people from the established art world join artists' associations (Bille 2010; Karttunen 1998). Subjective self-evaluation of being an artist has the advantage of not being elitist (Karttunen 1998).[12] It helps to spot emerging art producers that would not qualify as artists according to the other, more "traditional" criteria. However, it is purely subjective and, therefore, includes many individuals who would not be considered as artists by common sense, for example, poets who do not want or never will be able to publish their poems (Frey and Pommerehne 1989).

Bille (2010) suggests a somewhat cruder set of criteria to determine who is an artist than Frey and Pommerehne (1989). According to her, artists are people who work in the creative industry, have a creative job content, or have a creative education. Bille does not judge which of these criteria should be preferred but states that they constitute different angles from which artists can be studied. There is also no consensus among other researchers on the question of which criteria should be preferred to delineate artists. The only consensus that seems to emerge is that there is no a priori right definition of artists because no criterion or combination of criteria qualifies everywhere (Throsby 2001; Karttunen 1998; Frey and Pommerehne 1989). As such, the criterion, or the combination of criteria, should be selected depending on the purpose of the study and the availability of data (Karttunen 1998; Frey and Pommerehne 1989). The selection should be explicit, and the bias that the chosen definition might imply should be discussed (Karttunen 1998).

3.2 Definitions of artists in this study

In the German Socio-Economic Panel Survey (SOEP), each working individual has to report one principal occupation and at most one side occupation. Extended information is available on the principal occupation, whereas only limited information is available on the side occupation. Therefore, we focus on the principal occupation and do not take into account the side occupation. Consequently, we define individuals with an artistic principal occupation as artists. This definition corresponds

[11] Karttunen (1998) notes that the degree of organization differs significantly between countries and art forms.

[12] UNESCO adopted a definition that corresponds to a large degree with this criterion: "Artist is taken to mean any person who creates or gives expression to, or recreates works of art, who considers his artistic creation to be an essential part of his life, who contributes in this way to the development of art and culture and who is or asks to be recognized as an artist, whether or not he is bound by any relations of employment or association" (UNESCO 1980, p. 149).

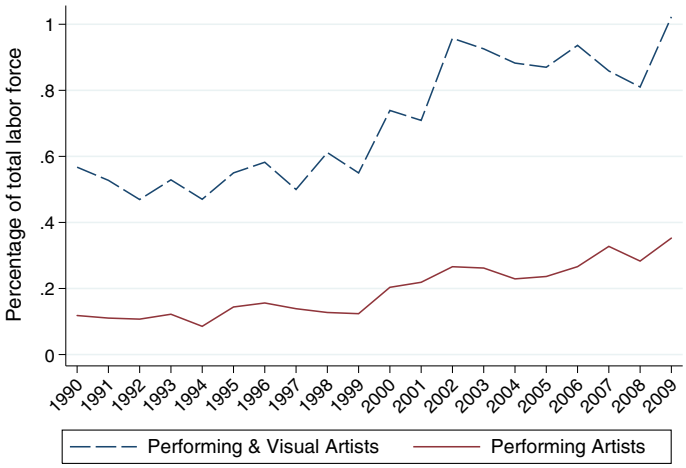

Fig. 1 Artists' percentage of total labor force (1990–2009)

largely to Bille's (2010) second criterion "having a creative job content." Strictly speaking, it only includes the most successful art producers, namely those who were able to make the arts their principal occupation. However, this (necessary) selection should not imply any substantial biases for the empirical analysis.[13]

The next question then is which occupations are to be considered as artistic. We use the two groups of artists most discussed in the Cultural Economics literature: performing and visual artists. The first set of occupations that we use for the empirical analysis combines both groups and is called "Performing & Visual Artists." For a more detailed analysis, we focus on performing artists only. This set is in the following called "Performing Artists." A detailed list of the occupations included in each group is given in the Appendix (Table 6). The empirical analysis is performed separately for both definitions, which permits interesting comparisons.

Figure 1 shows the artists' percentage of the total labor force over the period 1990–2009. The average percentages were 0.7 % (Performing & Visual Artists) and 0.2 % (Performing Artists). These percentages are comparable to those presented in other studies, for example, Haak (2005), who indicated a percentage of around 1 % for Germany in 2002. The percentages indicated in Fig. 1 were relatively stable from 1990 to 1998. From 1999 to 2002, all percentages increased markedly. A similar trend has been found in other studies on German artists, for example, Söndermann (2004). In 1998, after 16 years of ruling of the right-leaning Christian Liberal coalition, the left-leaning Social Democrats together with the Greens won the elections in Germany. This change of government could be the reason for the sharp increase in the percentages after 1998 because the left-leaning parties traditionally grant more government support to the arts than the right-leaning parties.

[13] If anything, our estimations would become more conservative. In the case of a positive correlation of an artistic activity with job satisfaction, those people who have an artistic job as a side occupation are counted as non-artists, thus increasing the average satisfaction of the non-artists and decreasing the probability of finding a significant effect.

4 Estimations and results

4.1 Data

The empirical analysis below is based on the SOEP from 1990 to 2009. The SOEP is one of the most comprehensive sources of socioeconomic information in Europe (Wagner et al. 2007). It contains detailed and carefully collected information on the occupation, income, working hours, education, and other individual and work-related aspects. This makes it possible to hold a multitude of characteristics constant when assessing job and life satisfaction differences between artists and non-artists. The SOEP has a panel structure that can be exploited to hold unobserved, time-invariant characteristics constant.

Job satisfaction is assessed with the following question in the SOEP: "How satisfied are you today with the following areas of your life: your job?" Individuals are asked to respond on a scale from 0 (totally unsatisfied) to 10 (totally satisfied).

In our empirical analysis, job satisfaction is related to several explanatory variables. The main explanatory variables are the dummies "Performing & Visual Artists" and "Performing Artists". They take the value of 1 when individuals state a principal occupation out of the lists given in Table 6 in the appendix, and 0 when individuals state another principal occupation. Apart from the occupation, a multitude of control variables is used, such as income and working hours.[14] Note that non-working individuals are excluded from the sample because the main explanatory variable is the occupation.

4.2 Basic results

In this section and Sect. 4.3, we test the hypothesis that artists derive a higher satisfaction from their work. Table 1 shows descriptive statistics on the differences in job satisfaction between artists and non-artists. Both groups of artists exhibit significantly higher job satisfaction than non-artists. In the case of Performing & Visual Artists, the difference is 0.26 index points (on a scale from 0 to 10) and 0.61 index points for Performing Artists. These findings are in line with the results of Rose (2007), who found that artists rank high in a comparison with raw job satisfaction scores in the United Kingdom.

However, raw job satisfaction differences might reflect many characteristics that distinguish artists from non-artists. The multivariate regressions presented in Table 2 hold a multitude of such characteristics constant. Equations 1 and 2 differ only with respect to the definition of artists used.[15] We employed the most

[14] Detailed descriptions are given in Table 7 in the appendix.

[15] The regressions are estimated with an OLS model. Strictly, job satisfaction is an ordinally scaled variable, which would speak for an ordered response model. However, OLS models have the advantage that the estimated coefficients are easier to interpret, and experience shows that they are a close approximation of estimations of job and life satisfaction (Ferrer-i-Carbonell and Frijters 2004). To ascertain, we also estimated the regressions with an ordered logit model. As expected, the results remained largely unchanged.

Table 1 Mean job satisfaction scores, scale 0–10

Performing & Visual Artists	7.32
Non-artists	7.06
Difference	0.26*** (0.0540)
Performing Artists	7.67
Non-artists	7.06
Difference	0.61*** (0.1036)

The differences are tested with a two-sided *t* test. Standard errors in parentheses. ***, **, * denote significance at the 1, 5, and 10 % level, respectively. *Data source*: SOEP 1990–2009

Table 2 Pooled cross-section regressions (dependent variable: job satisfaction, scale 0–10)

	(1)	(2)
Performing & Visual Artists	0.1471 (0.1008)	
Performing Artists		0.5393*** (0.1811)
Non-artists	ref. group	ref. group
Total gross income (log)	0.4491 (0.0180)	0.4491 (0.0180)
Working hrs. per week	−0.0294*** (0.0028)	−0.0294*** (0.0028)
(Working hrs.)^2	0.0002*** (0.0000)	0.0002*** (0.0000)
Tenure	−0.0079*** (0.0027)	−0.0079*** (0.0027)
(Tenure)^2	0.0002** (0.0001)	0.0002** (0.0001)
Self-employed	0.2336*** (0.0390)	0.2340*** (0.0390)
Number of obs.	173,491	173,491
Number of individ.	28,677	28,677
Time period	1990–2009	1990–2009
p value (*F* statistic)	0.0000	0.0000

OLS regressions. Robust standard errors in parentheses (corrected for repeated observations on individuals). ***, **, * denote significance at the 1, 5, and 10 % level, respectively. In addition to the variables shown, the regressions include variables for age, gender, education, living in the new Laender, firm size, and year

Data source: SOEP 1990–2009

frequently used control variables in studies on job satisfaction, such as pay, working hours, gender, education, and age.

The regression results confirm that artists are more satisfied with their jobs than non-artists, even when a multitude of work aspects are controlled for. However, the effect is only statistically significant for the group "Performing Artists" (Eq. 2). For the group "Performing & Visual Artists," the effect is not statistically significant (Eq. 1) for two reasons.

First, the standard errors are relatively large due to the rather small number of artists in the sample and the usage of a conservative way of estimation (robust, corrected for repeated observations on individuals).

Second, the size of the effects is reduced compared to the raw differences indicated in Table 1. One explanation here is that artists are substantially more often self-employed than non-artists. The percentages of the self-employed are 35 % (Performing & Visual Artists) and 40 % (Performing Artists) compared with Non-artists with 9 %.[16] Self-employment has been repeatedly found to have a positive effect on job satisfaction (e.g., Benz and Frey 2008), which is also confirmed in the regressions from Table 2. The reason is that the self-employed enjoy on average greater independence and autonomy than the employed (Benz and Frey 2008).

Even though, for both groups of artists, the job satisfaction effect in the multivariate regression is reduced compared to the raw difference, it remains quantitatively large and statistically significant in the case of the Performing Artists. Hence, the objective work aspects included in the regressions from Table 2 cannot completely explain why artists are more satisfied with their jobs than non-artists. There seem to be further aspects, related to artistic work itself, that make artists happier in their jobs.

4.3 The effect of unobserved individual characteristics

A common objection to results such as those reported above is that an observed correlation between being an artist and job satisfaction might suffer from endogeneity biases. Special personality traits might cause artists to be happier with their jobs, irrespective of the occupation they have. If the personality of artists—or other omitted factors, such as different norms—truly had a positive effect on job satisfaction, the estimated coefficients in the pooled OLS regressions would not reflect benefits from artistic work but time-invariant factors, which differ between artists and non-artists. The panel structure of the SOEP permits us to track individuals over time and to investigate how the job satisfaction of the same individuals changes when they move into or out of the artistic work. The panel data analysis covers dynamic aspects and allows for heterogeneity between individuals. Fixed effect models assume that individuals have unique attributes that do not vary over time. In technical terms, the underlying assumption is that the individual-specific effect can be correlated with the independent variables. In other words, artists have certain characteristics (personality, norms) that do not vary over time and are correlated with becoming an artist. The model can explain why an observation differs from its individual mean, but not the difference to the mean of other observations. It is crucial that a determinant (e.g., being an artist) varies over time. If not, it cannot be included in the fixed effect model. Random effect models assume that there are unique, time constant attributes of individuals that are the results of random variation and do not correlate with the independent variables. In other words, artists have no special time-invariant characteristics, which differ systematically from non-artists. They can explain why the mean from one observation differs from the mean of another observation. They can also include variables, which do not vary over time (e.g., gender). In Table 3, regressions with individual fixed effects are estimated that control for time-invariant individual characteristics.

[16] The coefficients/standard errors without controlling for self-employment are 0.1724/0.1010 (performing or visual artist), and 0.5718/0.1768 (performing artist).

Table 3 Fixed and random effects' regressions (dependent variable: Job satisfaction, scale 0–10)

	Fixed effects		Random effects	
	(3)	(4)	(5)	(6)
Perf. & Visual Artists	0.1545 (0.1075)		0.1758** (0.0792)	
Perf. Artists		0.1686 (0.2364)		0.4547 (0.1622)
Non-artists	ref. group	ref. group	ref. group	ref. group
Total gross income (log)	0.3319*** (0.0144)	0.3317*** (0.0144)	0.3526*** (0.0117)	0.3525*** (0.0117)
Working hrs. per week	−0.0000 (0.0021)	−0.0000 (0.0021)	−0.0112*** (0.0018)	−0.0112*** (0.0018)
(Working hrs.)^2	−0.0000 (0.0000)	−0.0000 (0.0000)	0.0001*** (0.0000)	0.0001*** (0.0000)
Tenure	−0.0600*** (0.0022)	−0.0599*** (0.0022)	−0.0390*** (0.0019)	−0.0390*** (0.0019)
(Tenure)^2	0.0009*** (0.0001)	0.0009*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)
Self-employed	0.2350*** (0.0339)	0.2361*** (0.0339)	0.2735*** (0.0275)	0.2742*** (0.0275)
Number of obs.	173,491	173,491	173,491	173,491
Number of individ.	28,677	28,677	28,677	28,677
Time period	1990–2009	1990–2009	1990–2009	1990–2009
p value (F statistic)	0.0000	0.0000	0.0000	0.0000

OLS regressions with individual fixed effects and random effects, respectively. Standard errors in parentheses. ***, **, * denote significance at the 1, 5, and 10 % level, respectively. In addition to the variables shown, the regressions include the same variables for age, education, living in the new Laender, firm size, and year as in the OLS regressions presented in Table 2

Data source: SOEP 1990–2009

The results largely indicate that the job satisfaction effects of artistic work are a robust phenomenon. The coefficient of the "Performing & Visual Artists" (Eq. 3) is of similar magnitude to the one reported in Table 2. This indicates that differences in unobserved individual characteristics, such as personality, do not greatly distort the estimations of Eq. 1. Compared to Eq. 2, the coefficient of the variable "Performing Artists" in Eq. 4 is smaller and statistically not significant. One possible explanation is a different personality trait profile. Second, the estimation of this coefficient in Table 3 might be unreliable. The estimation is based on only 39 changes into or out of the artistic work (compared to 191 changes in the case of Performing & Visual Artists). To circumvent this problem, the random effects' technique can be applied. The random effects' technique exploits the information of all observations, and not only the information of changes into or out of the artistic work.

Table 3 contains the random effects' regressions.[17] The coefficient of the variable "Performing Artists" is of similar magnitude as in the OLS regression (Eq. 2). In the fixed effects regression (Eq. 4), this coefficient is substantially smaller.

[17] Note that the Hausman specification test favors the fixed effects over the random effects' specification. The same result was found in a Danish job satisfaction study by D'Addio et al. (2007). As such, the random effects' results should be viewed with a certain caution.

This result indicates that the estimation of the coefficient with the fixed effects model might indeed be hampered by too few changes into or out of the artistic work. The coefficients of "Performing & Visual Artists" are of similar magnitude in the random effects' regressions, the fixed effects regressions, and the OLS regressions, which confirms the robustness and corroborates the conjecture that the number of changes into or out of the artistic work is sufficient in the case of "Performing & Visual Artists." The fact that these coefficients are statistically significant only in the random effects' regressions is a consequence of the smaller standard errors produced by this technique. The size of about 0.15 is equal to two-thirds of the effect of being self-employed versus being employed.

Summarizing one can say that because of the insignificance of the artist dummies in the fixed effect models, we cannot exclude that the positive relation between being an artist and job satisfaction is also influenced by time-invariant factors, which are systematically different to non-artists. The positive relation may be a result from different artists' personality, genes, or norms. However, the effect is positive and has roughly the same in all regression (OLS, fixed, and random effects). The insignificance in the fixed effect models is a technical result due to larger standard errors. Even though our data set is one of the largest panel data sets available, it includes relatively few individuals who change from being an artist to being a non-artist (or vice versa). For future research on this topic, it is necessary to collect even more comprehensive data including more artist over longer period of time.

4.4 Potential explanations for the job satisfaction difference

So far we find that artists enjoy higher utility from work than non-artists, even when changes in instrumental outcomes are controlled for. Controlling for unobserved individual heterogeneity does not alter the job satisfaction difference between artists and non-artists greatly. Hence, it seems that aspects of actual artistic work itself make artists happier in their jobs than non-artists.

In some SOEP waves, individuals were asked detailed questions about their work. Some of these questions concern valuations of outcomes and others "procedural" aspects of work, that is, processes and conditions leading to outcomes. Three questions concern procedural aspects of work. They each have to be answered with "applies completely," "applies partly," or "applies not at all." Table 4 depicts, for artists and non-artists, the overall percentage that answered the questions concerning procedural aspects of work with the most approving answer, that is, with "applies completely".[18] The fraction who answered the question "Is your job varied?" with "applies completely" is at least 20 percentage points higher for both groups of artists. The difference to non-artists is highly statistically significant.[19] Hence, it seems that artists have much more diverse jobs than non-artists. The fraction who answered the question "Do you often learn something new on the job, something

[18] These questions were only asked in two SOEP waves, namely in 1995 and 2001.

[19] A note on non-artists: Strictly, both groups of artists have their own "complementary set" in the labor force, that is, their own group of non-artists. However, these complementary sets are almost identical. Therefore, only one group of non-artists is depicted (complementary set of "Performing & Visual Artists").

Table 4 Comparison of work aspects

Performing artists	Performing & visual artists	Non-artists	
Job variety "Is your job varied?" (1995 and 2001 pooled)			
88.89***	82.79**	59.88	
On-the-job learning "Do you often learn something new on the job, something which is relevant for your career?" (1995 and 2001 pooled)			
69.44***	61.48***	35.92	
Autonomy "Do you decide yourself how to complete the tasks involved in your work?" (1995 and 2001 pooled)			
52.78	56.56***	38.78	
Concerns about job security "What is your attitude toward the following areas-are you concerned about them? Your job security" (1990–2009 pooled)			
49.59	48.23*	45.6	
Average satisfaction with personal income, scale 0–10 (2005–2009 pooled)			
6.06	6.08	6.02	Average satisfaction

The difference to non-artists is tested with a two-sided *t* test. ***, **, * denote significance at the 1, 5, and 10 % leve,l respectively. Data source: SOEP

which is relevant for your career?" with "applies completely" is also at least 20 percentage points higher for the artists. Again, the difference to non-artists is highly statistically significant. Hence, it seems that artists also learn more on their jobs than non-artists. The fraction who answered the question "Do you decide yourself how to complete the tasks involved in your work?" with "applies completely" is at least 15 percentage points higher for the artists. The difference is only statistically significant for "Performing & Visual Artists." Overall, the results indicate that artists enjoy more autonomy in their jobs than non-artists. This is not surprising insofar as artists are substantially more often self-employed than non-artists (see Sect. 4.2). The self-employed are known to enjoy more independence and autonomy in their jobs than the employed (see, e.g., Benz and Frey 2004).

The first question concerning valuations of work outcomes is "What is your attitude toward the following areas—are you concerned about them? Your job security." This question has to be answered with either "very concerned," "somewhat concerned," or "not concerned at all." It was asked in all SOEP waves included in our sample, that is, from 1990 to 2009. Both groups of artists responded more often with "not concerned at all" than non-artists, and the group "Performing & Visual Artists" statistically significantly so (see Table 4). These results are somewhat surprising in light of the literature on the subject, which depicts the artists' labor market situation as rather grim (cf. Sect. 2.2). It should be noted, however, that the difference to non-artists is quantitatively rather small. The differences range between 1.9 and 4 percentage points. This is rather small compared to the questions on procedural aspects of work, where the smallest such difference is 15 percentage points. The second question concerning valuations of work outcomes is "How satisfied are you today with the following areas of your life: your personal income?" This question has to be answered on a scale from 0 (totally unhappy) to 10 (totally happy). It was asked in all SOEP waves from 2005

onwards. Artists are less satisfied with personal income than non-artists, but the difference is not statistically significantly.

There seem to be no substantial differences in satisfaction with job security and income that could explain the difference in overall job satisfaction between artists and non-artists. On the other hand, artists seem to enjoy considerably more favorable procedural working conditions than non-artists, such as job variety, on-the-job learning, and autonomy. These factors are likely to contribute to the artists' high job satisfaction, in particular, job variety and autonomy, which have been found to have a positive effect on job satisfaction in previous studies (Warr 1999; Benz and Frey 2004). To assess exactly to what extent procedural work aspects explain the job satisfaction difference between artists and non-artists, it would be necessary to include them as control variables in the regressions from Table 2. However, only two SOEP waves could be used, which would not leave a large enough number of artists in the sample. Therefore, such an approach is not reliable with the data at hand, and the evidence on the reasons for the job satisfaction difference between artists and non-artists remains suggestive. Note that the factor "autonomy" is likely to correlate strongly with self-employment and firm size (Benz and Frey 2008). Hence, by including self-employment and firm size as control variables, we do account to some extent for differences in autonomy in the regressions.

4.5 Artist-specific effects of income and working hours

This section addresses two fundamental assumptions of Throsby's (1994) work-preference model. The first hypothesis we test is that artists actually derive utility from work and not disutility as assumed by standard economics. More precisely, Throsby assumes that an additional unit of working time adds to artists' utility, all else equal. In order to test this hypothesis, it is necessary to allow for an artist-specific effect of working hours on job satisfaction. Technically, working hours are interacted with the artist dummies.[20] The second hypothesis we test is that artists derive less utility from income than other workers. In order to test this hypothesis, it is necessary to allow for an artist-specific effect of income on job satisfaction. Therefore, income is also interacted with the artist dummies.

Table 5 contains the regressions with interaction terms. The same specifications as in Table 2 are estimated, with the difference that interaction terms for income and working hours are included and working hours do not enter in squared form. The coefficients of the variable "Working hrs. per week" represent the effect of working hours on job satisfaction for non-artists alone. They show that for non-artists, working hours have a significantly negative effect on job satisfaction. Hence, non-artists seem to function as assumed by standard economics in this respect.

The coefficients of the interaction terms of the artist dummies with working hours are positive and statistically significant for both groups of artists (Eqs. (7, 8). Hence, the effect of working hours on job satisfaction seems to differ between artists and non-artists. In order to obtain the effect of working hours on job satisfaction for artists, it is necessary to sum up the coefficients of the variable "Working hrs. per

[20] For the sake of simplicity, squared working hours are disregarded.

Table 5 Pooled cross-section regressions with interaction terms (dependent variable: Job satisfaction, scale 0–10)

	(7)	(8)
Working hrs. per week	−0.0104***	−0.0103***
	(0.0009)	(0.0009)
Performing & VisualArtists × Work.hrs.	0.0177**	
	(0.0073)	
Performing Artists × Work.hrs.		0.0223*
		(0.0127)
Total gross income (log)	0.4066***	0.4048***
	(0.0171)	(0.0170)
Performing & Visual artists × tot.gr.inc.	−0.2615**	
	(0.1113)	
Performing Artists × Tot.gr.inc.		−0.2338
		(0.1928)
Number of obs.	173,491	173,491
Number of individ.	28,677	28,677
Time period	1990–2009	1990–2009
p value (*F* statistic)	0.0000	0.0000

OLS regressions. Robust standard errors in parentheses (corrected for repeated observations on individuals). ***, **, * denote significance at the 1, 5, and 10 % level, respectively. In addition to the variables shown, the regressions include variables for occupation (dummy for artistic occupations), firm tenure, self-employment, age, gender, education, living in the new Laender, firm size, and year

Data source: SOEP 1990–2009

week" and the coefficients of the respective interaction terms. It can be seen that for both groups of artists the sum is positive. Hence, for artists unlike for non-artists, the effect of working hours on job satisfaction is positive. These findings corroborate Throsby's assumption that artists actually derive utility from work and not disutility, as assumed by standard economics. Thus, a special treatment of artists in the theoretical modeling of labor market behavior seems warranted.

The coefficients of the variable "Total gross income (log)" represent the effect of income on job satisfaction for non-artists. As expected, income has a significantly positive effect on job satisfaction for non-artists.

The coefficients of the interaction terms of the artist dummies with income are negative for all groups of artists and statistically significantly so for the group "Performing & Visual Artists." So, the effect of income on job satisfaction seems to differ between artists and non-artists, at least in case of the group "Performing & Visual Artists" (Eq. 7). In case of the group "Performing Artists," the coefficient is not statistically significant, though of similar magnitude to the coefficients of the other groups (Eq. 8). The reason for the statistical insignificance here is likely the small number of observations on the group "Performing Artists." In order to obtain the total effect of income on job satisfaction for artists, it is necessary to sum up the coefficients of the variable "Total gross income (log)" and the coefficients of the respective interaction terms. It can be seen that for all groups of artists, the sum is positive. Hence, for artists like for non-artists, the effect of income on job satisfaction is positive.

However, the effect is substantially smaller for artists. In case of "Performing & Visual Artists," the effect is more than halved compared to non-artists. These findings corroborate Throsby's assumption that artists derive less utility from income than other workers. This holds at least for the group "Performing & Visual Artists," where the coefficients of the interaction terms exhibit statistical significance.

5 Conclusion

In this paper, German panel data are employed to investigate artists' job satisfaction. Artists are on average found to be considerably more satisfied with their work than non-artists. The results indicate that differences in material outcomes, such as higher pay or a lower number of working hours as well as differences in personality, cannot account completely for the observed difference in job satisfaction. Partially, but not fully, the job satisfaction difference can be attributed to the higher self-employment rate among artists. The rest of the job satisfaction difference seems to be caused by aspects of artistic work itself. What these aspects are cannot be demonstrated with certainty within the scope of this study, but suggestive evidence is found that it is "procedural" aspects, such as increased job variety and on-the-job learning, which make artistic work particularly rewarding.

There are some caveats to these results. First, data from one country only are employed. Given the availability of data, future studies may expand the analysis to other countries in order to investigate the robustness of the results in different cultural and economic contexts.

Second, the observed correlations between artistic work and job satisfaction do not rule out endogeneity. Causation may run in the reverse direction if more satisfied people are more likely to become artists. It would be an interesting task for a future study to rule out this concern. In order to do so, a source of exogenous variation has to be found. The data hint at an event that could potentially be used as a "natural experiment" on the creation of artists. In 1998, after 16 years of ruling of the right-leaning Christian Liberal coalition, the left-leaning Social Democrats together with the Greens won the elections in Germany. Left-leaning parties traditionally grant more government support to the arts than right-leaning parties. Indeed, the data show that the artists' percentage of the total labor force increased substantially in the years following 1998. If it can be shown convincingly that a raise in government aid leads to this increase, the change of government in 1998 might be used as a "natural experiment" on creation of artists.[21]

A third caveat is that the number of artists in the sample is relatively small, as artists constitute a diminutive fraction of the total labor force (between 0.2 and 0.7 %, depending on how "artist" is defined). Consequently, the standard errors are relatively large, and even though the effects of the main explanatory variables are of

[21] Note that the change of government did not create a natural experiment in the sense that people were randomly chosen to become artists. Rather, the term is here used to describe an exogenous change in conditions for artists. Also, note that the change of government was not completely exogenous, as the new government was elected by the individuals in the data set.

considerable magnitude, they are not statistically significant in some regressions. Especially, the fixed effects regressions suffer from the fact that in our data set, relatively few individuals change from being an artists to being a non-artists and vice versa. Therefore, we cannot rule out completely that the increased happiness of artists also stems from time-invariant factors, such as personality, genes, or norms, which differ systematically from non-artists. However, the size and sign of the estimated coefficients, as well as the suggestive evidence on the work characteristics in Sect. 4.4, indicate that artists derive a positive utility from the work itself.

For the same limitation, that is, the overall small number of artists, the data from all available SOEP waves have to be pooled for the regressions. Therefore, procedural work aspects cannot be included in the regressions because they were only assessed in a few SOEP waves. Including procedural work aspects in the regressions would yield more detailed evidence on their role in explaining the high job satisfaction among artists. In future studies and with more extensive data at hand, this procedure might become feasible and yield valuable insights.

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Appendix

See Tables 6, 7

Table 6 Occupations included in the two definitions of artists

	Performing & visual artists	Performing artists
Authors, journalists, other writers (2,451)	Yes	
Sculptors, painters, related artists (2,452)	Yes	
Composers, musicians, singers (2,453)	Yes	Yes
Choreographers, dancers (2,454)	Yes	Yes
Film, stage and related actors, directors (2,455)	Yes	Yes
Photographers, image and sound recording equipment operators (3,131)	Yes	
Street, night-club and related musicians, singers, dancers (3,473)	Yes	Yes
Clowns, magicians, acrobats, related professionals (3,474)	Yes	Yes

Occupation code according to the International Standard Classification of Occupations 88 (ISCO-88) in parentheses

Table 7 Variables

Name	Description
Job satisfaction	Overall job satisfaction. Scale: 0 (totally unsatisfied) to 10 (totally satisfied)
Performing & Visual Artists	=1 if individual is a performing or visual artist in her principal occupation, 0 else (see Table 6 for a list of the respective occupations)
Performing Artists	=1 if individual is a performing artist in her principal occupation, 0 else (see Table 6 for a list of the respective occupations)
Total gross income	Current gross monthly labor income in Euros
Working hrs. per week	Total working hours in an average week (including overtime)
Tenure	Firm tenure in years
Self-employed	=1 if self-employed, 0 if employed
Age	Age in years
Sex	=1 if female
Years of education	Amount of education (or training) in years
East	=1 if living in one of the new Laender, 0 if living in one of the old Laender
Foreign	=1 if nationality is not German

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